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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/970,351 | 10/03/2001 | Carey Ritchey | 49581/P030US/10104106 | 1535 |

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| EXAMINER | |
|---|---|
| JONES, STEPHEN E | |
| **ART UNIT** | **PAPER NUMBER** |
| 2817 | |

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/970,351 | RITCHEY ET AL. | |
| | Examiner | Art Unit | |
| | Stephen E. Jones | 2817 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 July 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-22 and 24-48* is/are pending in the application.

4a) Of the above claim(s) *4,5,16-21,29-36,47 and 48* is/are withdrawn from consideration.

5)☒ Claim(s) *26,27 and 37-46* is/are allowed.

6)☒ Claim(s) *1-3,6,7,22,24 and 25* is/are rejected.

7)☒ Claim(s) *8-15 and 28* is/are objected to.

8)☒ Claim(s) *1-22 and 24-48* are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 4-5, 16-21, 29-36, and 47-48 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-7, 22, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by the reference "A Low Distortion Pin Diode Switch Using Surface Mount Devices" of record.

"A Low Distortion Pin Diode Switch Using Surface Mount Devices" (Fig. 6) teaches an SPDT switch including: an RF input (e.g. port 1) and an output (e.g. port 3); pin diodes (D1 and D2) are in a network configuration in the signal path between the input and output (Claim 2); the diodes are connected with a common anode node (Claim 6); inherently the cathodes would have a constant DC bias voltage since the shunt inductors (L1, L3) at the cathode nodes would inherently shunt the DC voltage in the same manner as the presently claimed invention to provide proper functionality (Claim 1); the combination of the series diodes and the inductors (L1 and L3) forms a pi-network shape as can be seen in Fig. 6 (Claim 3); a first control signal (bias 1) is

connected to the common anode node via a first inductor (L 2) which inherently allows the DC bias current to the reach the common anode node and to prevent the RF signal from reaching the control port, especially since the bias is required to operate the diodes to function properly and the RF signal would inherently be blocked by the inductor (and allow DC voltage to pass) in a similar manner to the shunt inductors (L1 and L3) so that the signal will reach the output port properly (Claims 7 and 25); additional diodes (D3, D4) have their anodes connected to a second DC control port (Bias 2) (Claim 22); the DC voltage at the cathodes of the diodes (D3, D4) also inherently is constant in the same manner as the diodes (D1, D2) described above because of the shunt inductors (L3, L5); and the network including inductors (L1 and L5) with the four diodes can also be considered in pi-configuration shape (see Fig. 6) (Claim 24).

Also note that the preamble of the claims recites an attenuator or attenuation. However, nothing in the body of the claims is unique to an attenuator or requires and attenuator. Therefore the description of an attenuator or attenuation in the preamble is not given any patentable weight.

***Response to Arguments***

4. Applicant's arguments filed 7/15/03 have been fully considered but they are not persuasive.

Applicant argues that the Agilent reference ("Low Distortion Pin Diode Switch Using Surface Mount Devices") does not teach a circuit providing constant DC bias voltage at a cathode of each diode of the plurality of diodes because the inductors L1

and L3 only provide a DC ground without DC isolation to circuitry coupled to the RF ports.

Applicant's arguments are not convincing since the cathodes of the Fig. 6 prior art are connected to ground through inductors (L1 and L3) in the same manner as the present invention thus providing a DC path to ground (as admitted by applicant). Furthermore, the lack of DC blocking capacitors to the RF ports in the prior art Fig. 6 does not result in the DC bias being non-constant at the cathodes (as argued by applicant) since the cathodes are indeed DC connected to ground through the inductors L1 and L3, and the addition of RF port blocking capacitors (such as shown in Fig. 2 of the present invention) would not negate the DC grounding through the inductors of the prior art (i.e. the DC grounding through the inductors provides constant DC bias at the cathodes by itself).

Applicant also argues that the prior art Fig. 6 does not show a plurality of diodes in a pi-network configuration.

This argument is not persuasive because, for example, the diodes D1 and D2 along with inductors L1 and L3 clearly can be considered to form a pi-configuration.

### *Allowable Subject Matter*

5. Claims 8-15 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 26-27 and 37-46 are allowed.

***Conclusion***

**7. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

SEJ